

June 25, 1971

APOLLO PROGRAM DIRECTIVE NO. 40B

TO: DISTRIBUTION

FROM: Rocco A. Petrone
APOLLO PROGRAM DIRECTOR

SUBJECT: LAUNCH CRITICAL SPARES MANAGEMENT

JUN 25 1971

OFFICE OF PRIMARY RESPONSIBILITY: MAP

I. PURPOSE

This Program Directive provides the definition of Launch Critical Spares and the criteria for their selection; the responsibilities and actions required for managing these spares at KSC; and the requirements for status reporting. The objective is two-fold: (1) establish the optimum spares to achieve high degree of launch-on-schedule probability; (2) provide the Apollo Program Director, Managers, and their staffs with central unified management data controls for decision making purposes.

II. SCOPE

The provisions of the Directive apply to all MSF Center organizational elements having management responsibility for Apollo Program equipment that must function during launch operations at Kennedy Space Center.

III. DEFINITION AND SELECTION OF CRITERIA

A. The definition of a launch critical spare is:

A component, part, or assembly to be used in replacing an item whose satisfactory operation has been determined by the design activity to be mandatory to launch operations.

B. The criteria to be used for the selection of launch critical spares are:

1. Item is mandatory for launch/mission.
2. It is a first level maintenance item.
3. Once countdown has started, the failed part can be identified and removed and the replacement part installed and verified in the system within 12 hours. (The 12 hour down-time is defined to be from fault detection through resumption of countdown.)

ACTION REQUIRED

KSC-MSC-MSFC

A. Using the above criteria, each Center shall take that action necessary on those systems for which it has design engineering responsibility to:

1. Identify all Launch Critical Spares by maintenance requirements and safety analyses to assure that all identified Launch Critical Items can be fault-isolated, removed, and replaced, and the replacement part verified in a safe manner during launch count-down scheduled holds. On existing contracts, engineering judgment and operational experience are criteria considered to meet the overall intent of a maintenance requirements analysis. However, if there should be a major system change requiring new contractual coverage, a maintenance requirements analysis shall be performed for the identification of applicable spares.
2. Position the established levels of Launch Critical Spares at KSC prior to the start of CDDT. Actions must include positioning of associated Maintenance Ground Support Equipment (MGSE) and the supporting operating and maintenance manuals at the launch site.
3. Establish a spares replenishment plan to assure optimum KSC storage levels for each designated Launch Critical Item. A rapid resupply capability shall be incorporated in the plan.
4. Discriminately provide for supply services and establish inter-center procedures/agreements for transportation, accountability, storage, and issue and reporting.

B. Operating procedures shall be established to:

1. Assure spares configuration update resulting from approved change actions.
2. Review and revise as required the stockage levels on a continuing basis using actual failure/usage data.
3. Assure Launch Critical Spare Parts are available to cover new equipment incorporated into any system.

C. Establish a central point of contact/office of responsibility for the uniform implementation of this Program Directive.

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V. REPORTING

- A. MSC and MSFC shall forward Launch Critical Spares Status reports to KSC using the format called for by Figure 1. The first report for each Apollo launch shall be submitted concurrent with the input to the Flight Readiness Review. The second and last report shall be submitted five days prior to Wet CDDT. However, as stated in paragraph C below, each MSF Center is to report on problem items in compliance with APD 8B.
- B. The report shall include the following items for each system and for GSE:
1. Total L/C Identified - In consonance with the definition and selection criteria of III above, enter the total number of Launch Critical Spares identified and required to support a specific launch.
 2. On Hand - These are the line items available at the launch site for the Operations and Maintenance activity.
 3. Due in by CDDT - Enter the number of line items which have an estimated on dock dated prior to the start of CDDT.
 4. Remarks - Include a statement on each item that will not be on hand at the start of CDDT for which acceptable work-arounds will not be available by CDDT. The statement should include probability of failure of the item, impact to launch, or other pertinent information.
- C. Each Center shall be prepared to provide a full report of the Launch Critical Spares which are potential problems for their respective items for each FRR per APD 8B. The report shall include, as a minimum, the following:
1. Line items at launch site with less than minimum stockage levels by start of CDDT.
 2. Work-around procedures available, by number and type, for those items not in place by the start of CDDT.
 3. Impact to launch - explain the launch risk involved if a Launch Critical Spare is not available and a work-around procedure has not been developed.

[illegible]

Figure 1



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER
KENNEDY SPACE CENTER, FLORIDA 32899

REPLY TO
ATTN OF: AA-PCO-2

SEP 1 1971

MEMORANDUM

TO: Distribution

FROM: AA/Manager, Apollo-Skylab Programs

SUBJECT: Apollo Program Directive No. 40B, Launch Critical Spares Management

REF: Briefing Note to Dr. Debus from AA, dated August 31, 1971, subject as above

As discussed in the referenced briefing note, the subject Apollo Program Directive deletes the requirement for separate Launch Critical Spares Reporting to Headquarters. Copies of the referenced briefing note and the subject APD 40B are attached for your information. AA will continue to issue a letter establishing reporting dates for Launch Critical Spares; otherwise, this APD 40B has the same basic reporting requirements as APD 40A.

for William H. Rost
Robert C. Hock

2 Enclosures:

1. Briefing Note to Dr. Debus from AA
2. APD 40B

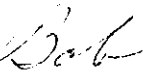
Distribution:
Apollo-Skylab Distribution S

BRIEFING NOTE TO: CD/Dr. Debus

SUBJECT: Apollo Program Directive No. 40B, Launch Critical Spares Management

The attached Apollo Program Directive deletes the separate launch critical spares reporting to Headquarters. Launch Critical Spares Reports are now only required at the LRR and FRR in accordance with APD 8B, Apollo Flight Readiness Reviews.

We will continue to issue a letter establishing due dates for the Launch Critical Spares Reports to meet the LRR and FRR reporting requirements for the remaining two launches.


Robert C. Hock